

REMARKS

In the Final action dated December 30, 2003, claims 29 – 31 are allowed, claims 1 – 6, 8, 27, and 28 were rejected and claims 7 and 9 – 14 were objected to. Applicants hereby request reconsideration of the application in view of the below-provided remarks.

I. Claim Rejections Under 35 U.S.C. 103

Claims 1 – 6 and 8 were rejected under 35 U.S.C. 103(a) as being unpatentable over De Vre et al. (U.S. Pat. No. 5,640,256, hereinafter De Vre) in view of Hamel et al. (U.S. Pat. No. 5,712,717, hereinafter Hamel).

Claim 1

Claim 1 recites a tunable optical filter comprising:

“a plurality of electroholographic (EH) gratings, said EH gratings being optically connected such that an input optical signal can pass through at least one of said plurality of EH gratings, wherein said EH gratings are activated to filter said input optical signal in response to an applied voltage, said plurality of EH gratings including EH gratings with different center wavelengths and EH gratings with the same center wavelengths.”

With regard to claim 1, the Final action states “DeVre et al teaches (see Figures 1, 2, 7, 8, 13 and 14) a tunable optical filter or a method for filtering an optical signal comprising a plurality of electroholographic (EH) gratings (12) with different center wavelengths, said EH gratings being optically connected such that an input optical signal can pass through at least one of said plurality of EH gratings as shown in Figures 2, 7 and 8 wherein said EH gratings are activated to filter said input optical signal in response to an applied voltage as described in column 8, lines 60 – 67, column 9, lines 1 – 67, column 10, lines 1 – 16, and column 12, lines 4 – 63” and “[h]owever, in regard to claim 1, DeVre et al does not teach that said plurality of EH gratings including EH gratings with different center wavelengths and EH gratings with the same center wavelengths.” The Final action goes on to state that “Hamel et al teaches a plurality of gratings including gratings with different center wavelengths and gratings with the same

center wavelengths as described in column 3, lines 14 – 21, column 5, lines 42 – 51 and column 6, lines 21 – 26. The Final action then concludes that it would have been obvious to one having ordinary skill in the art at the time the invention was made “to have the plurality of gratings include gratings with different center wavelengths and gratings with the same center wavelengths as taught by Hamel et al for the filter of DeVre et al in order to improve the rejection level of particular wavelengths over a more extensive spectral range.”

Applicants assert that a *prima facie* case of obviousness has not been established with regard to claim 1 because the Final action has not presented some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify one of the references or to combine the reference teachings. In particular, Applicants assert that the Final action does not identify a suggestion or motivation either in De Vre or Hamel or in the knowledge generally available to one of ordinary skill in the art, to combine De Vre with Hamel. The only support provided for the combination is the general statement “in order to improve the rejection level of particular wavelengths over a more extensive spectral range.” Applicants point out that “[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.” [M.P.E.P. 2142] Applicants assert that the above-identified general statement does not provide the requisite factual basis to support a *prima facie* case of obviousness.

Further, as stated in *Ex parte Clapp*, 227 USPQ 972, (Bd. Pat. App. & Inter. 1985) “[t]o support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” The examiner has not identified where the prior art references expressly or impliedly suggest the claimed invention nor has the examiner presented a convincing line of reasoning as to why an artisan would have found the claimed invention obvious. As stated, above, *the only support* provided for the examiner’s suggested combination is the general statement “in order to improve the rejection level of particular wavelengths over a more extensive spectral range.” Applicants assert that this general statement does not identify where the prior references suggest the claimed

invention nor provide a convincing line of reasoning to support a *prima facie* case of obviousness.

With the rejection of Claim 1, the Final action has failed to provide the requisite factual basis and failed to establish the requisite motivation to support the conclusion that it would have been obvious to one skilled in the art to combine De Vre with Hamel. The Examiner is requested to cite art supporting his assertions. Alternatively, if the Examiner is aware of facts within his personal knowledge that provide the requisite factual basis and establish the requisite motivation to support his conclusion that it would have been obvious to one skilled in the art to combine De Vre with Hamel, the Examiner is requested to provide an affidavit in accordance with 37 C.F.R. 1.104(d)(2).

Claims 2 – 6 and 8

Claims 2 – 6 and 8 are dependent on claim 1. Applicants assert that claims 2 – 6 and 8 are allowable based on an allowable claim 1.

II. Claim Rejections Under 35 U.S.C. 102

Claim 27

Claim 27 was formed by combining the limitations of claims 1 and 4 as filed. Claim 27 recites a tunable optical filter comprising:

“a plurality of electroholographic (EH) gratings with different center wavelengths, said EH gratings being optically connected such that an input optical signal can pass through at least one of said plurality of EH gratings, wherein said EH gratings are activated to filter said input optical signal in response to an applied voltage;

wherein said EH gratings are tunable over a range of wavelengths in response to adjustments in the applied voltage.”

The Final action states that the claim element “wherein said EH gratings are tunable over a range of wavelengths in response to adjustments in the applied voltage” is disclosed by De Vre in column 9, lines 1 – 67 and column 10, lines 1 – 16.”

Applicants assert that claim 27 is not anticipated by De Vre for the reasons stated in Applicants’ October 21, 2003 Response.

In response to Applicants arguments of October 21, 2003, the Final action further points to column 10, lines 11 – 16 and column 13, lines 5 – 9 of De Vre as disclosing “wherein said EH gratings are tunable over a range of wavelengths in response to adjustments in the applied voltage.” With regard to column 10, lines 11 – 16, although De Vre does disclose a dynamic multiple wavelength device, De Vre does not disclose “wherein said EH gratings are tunable over a range of wavelengths in response to adjustments in the applied voltage.” Specifically, De Vre does not disclose gratings that are “tunable over a range of wavelengths in response to adjustments in the applied voltage.” Moreover, nowhere does De Vre disclose tuning any grating over a range of wavelengths. As stated above, De Vre simply discloses a system in which EH gratings are turned either “on” or “off.”

With regard to column 13, lines 5 – 9, De Vre discloses “the heaters required during the thermal fixing step may be integrated with the filter to facilitate reprogramming of Bragg wavelengths at any time.” Applicants acknowledge that gratings can be reprogrammed using the heaters required during the thermal fixing step as disclosed by De Vre. However, De Vre does not disclose “wherein said EH gratings are tunable over a range of wavelengths in response to adjustments in the applied voltage” (emphasis added) as recited in claim 27. That is, De Vre discloses reprogramming of Bragg wavelengths using heaters while claim 27 recites gratings that are “tunable...in response to adjustments of the applied voltage.” Because De Vre does not disclose “wherein said EH gratings are tunable over a range of wavelengths in response to adjustments in the applied voltage,” claim 27 is not anticipated by De Vre.

The above-provided remarks apply also to claim 4.

Claim 28

Claim 28 is dependent on claim 27. Claim 28 is the same as claim 5 and recites “wherein the tunable wavelength ranges of said EH gratings combine to form a continuously tunable wavelength range.” With regard to claim 28, the Final action states “De Vre et al discloses that the tunable wavelength ranges of said EH gratings combine to form a continuously tunable wavelength range as described in column 9, lines 1 – 67 and column 10, lines 1 – 16.”

Applicants assert that new claim 28 is not anticipated by De Vre for the reasons stated in Applicants’ October 21, 2003 Response.

In response to Applicants arguments of October 21, 2003, the Final action further points to column 10, lines 11 – 16 and column 13, lines 5 – 9 as disclosing “wherein the tunable wavelength ranges of said EH gratings combine to form a continuously tunable wavelength range.” Applicants assert that the remarks provided above with regard to claim 27 apply also to claim 28.

The Final action also points to Figs. 10C and 10D as showing “that the filtering response is continuous over a range of wavelengths in that there is a Bragg selectivity response, which is uninterrupted (i.e., continuous) over the range shown.” (Final action, page 9) Applicants assert that Figs. 10C and 10D do not disclose “wherein the tunable wavelength ranges of said EH gratings combine to form a continuously tunable wavelength range” as recited in claim 28. Figs. 10C and 10D depict the selectivity response of particular Bragg gratings. As clearly shown in Figs. 10C and 10D, the selectivity responses are fixed at particular center wavelengths. Nowhere does De Vre disclose that the responses of these filters are continuous in any way or “combine to form a continuously tunable wavelength range.” It is clear that the filter responses of Figs. 10C and 10D are fixed at designated wavelengths and nowhere does De Vre disclose that the selectivity responses can be combined “to form a continuously tunable wavelength range.” Because De Vre does not disclose “wherein the tunable wavelength ranges of said EH gratings combine to form a continuously tunable wavelength range” as recited in new claim 28, Applicants assert that new claim 28 is not anticipated by De Vre.

The above-provided remarks apply also to claim 5.

III. Allowable Subject Matter

Claims 7 and 9 – 14 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants have not rewritten these claims in view of the above-provided remarks.

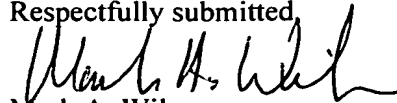
Applicants note with appreciation that Claims 29, 30, and 31 were allowed.

1

Applicants respectfully request reconsideration of the claims in view of the remarks made herein. A notice of allowance is earnestly solicited.

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Respectfully submitted,



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